ZQ-1000

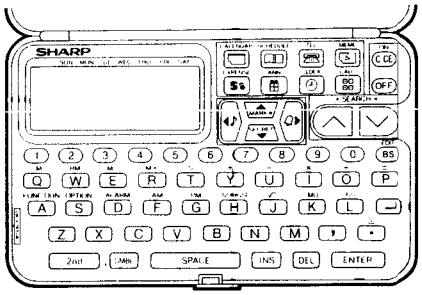
SHARP SERVICE MANUAL

CODE: 00ZZQ1000SM/E

SHAR-03070

MODEL ZQ-1000, ZQ-1050 ZQ-1200, ZQ-1250

KEY LAYOUT



KEY SYSTEM: Rubber key

STANDARD FUNCTION	10 digits 1 M	
DISPLAY SECTION	ELEMENT: FEM LCD	PARTS NAME: LF7741Q
	NUMERAL: 14 digits (3 lines)	
	0.88 0.05 / 0.55 0.05 (mm)	5 x 5 dot matrix liquid crystal display 14 columns x 3 lines (with 5 x 5 dot characters)

LSI

LSI: JT6B27 (COB type)

RAM:
- ZQ-1000/1050 LH5168TS
- ZQ-1200/1250 CXK58257AM-12LB

POWER SUPPLY	AC: X	DC: O

Main power supply:
6 V DC lithium batteries (CR2025 x 2)
Memory backup power:
3 V DC lithium battery (CR2025 x 1)

AC ADAPTOR	
RECHARGEABLE BATTERY	
POWER CONSUMPTION	0.01 W
AUTO POWER OFF TIME	Approx. 7 minutes
MEMORY PROTECT	Yes

DIMENSIONS(mm)

Open : 133.5(W) x 162(D) x 8.9(H) mm.
Closed : 133.5(W) x 83(D) x 11.6(H) mm.

Weight: Approx. 105g (including batteries)

CALCULATIONS

addition, subtraction, multiplication, division; constant, square root, percent, markup, memory calculation, etc.

Accessories

Lithium batteries (CR2025 x 3)
Operation manual

Electronic notebook section

Telephone directory mode	Names, phone numbers, and addresses
Schedule mode	Dates, appointment times, and details of appointments Automatic day-forward function, schedule alarm function
Anniversary mode	Anniversary dates and details of anniversaries
Calendar mode	From Jan., 1901 to Dec., 2099 Schedule mark function distinguishing between morning, afternoon, and anniversary appointments
Memo mode	Everyday memos
Expense mode	Expense date, amout, description, summary
Memory capacity	ZQ-1000/1050 10K bytes (User area: Approx. 9K bytes) Schedule mode capacity: Approx. 140 items, each consisting of up to 32 characters Telephone directory mode capacity: Approx. 240 items, each consisting of 16 characters for name entry and 12 for number entry ZQ-1200/1250 34K bytes (User area: Approx. 33K bytes) Schedule mode capacity: Approx. 550 items, each consisting of up to 32 characters Telephone directory mode capacity: Approx. 880 items, each consisting of 16 characters for name entry and 12 for number entry These capacities only apply when all the available memory has been committed to a single function.
Maximum character string length per data	512 characters
Other features	Secret function, data transfer

Clock

Clock precision	Average variance ±30 seconds per month (at 25°C/77°F)
Content of displays	year, month, day, day of week, hours, minutes, A.M./P.M.
Time system	12-hour and 24-hour clock

Operating time

- Approx. 1300 hours
  When data is continuously displayed at an ambient temperature of 20°C (68°F).
- Approx. 1000 hours
  When data is searched for 5 minutes per hour, and the data is displayed for 55 minutes per hour, at an ambient temperature of 20°C (68°F).
- When off, and the clock is running, operating time: Approx. 1 year
- Memory backup battery life:
  Approx. 5 years (if operating batteries are replaced promptly when exhausted)
  Approx. 3 years (if operating batteries are exhausted or not installed)

Parts marked with "⚠" is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

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The contents are subject to change without notice.

NT

3070

1 Check items

1. Contrast check

The Organizer allows adjustment of display contrast as desired by its user.

[Check procedure]

[2nd][A][2]

Press [▲] a few times to check contrast becomes darker.

Press [▼] a few times to check contrast becomes lighter.

2. Operation check by diag functions

Refer to 2.

3. Caution check

The Organizer is equipped with the low battery detection function to save user's data when the battery is depleted. When the battery voltage falls to a certain level (about 4.0V), [BATT] symbol lights up to urge the user to replace the battery.

[Check procedure]

Drop the operation voltage to 3.8V and check that [BATT] symbol lights up.

4. Fatal check

When a certain level of voltage (about 3.0V) is detected, the operation is stopped to save user's data.

[Check procedure]

Drop the operation voltage to 2.8V and check that the display turns off.

5. System OFF current measurement

Current value of the operation power should be 8μA or less.

6. ON current measurement

ON current should be 70μA or less.

7. OFF current measurement

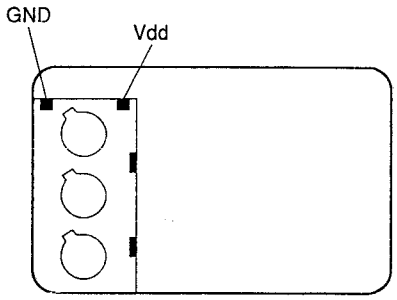
OFF current should be 10μA or less.

8. Backup current measurement

Set the operation voltage to 0V, measure the current of the backup power, and check that the current value is 8μA or less.

9. RAM voltage check

Remove the two operation batteries, measure the voltage between Vdd and GND through the hole in the lower cabinet. Check that the voltage is 2.5V or more. After the completion of the measurement, insert the operation battery and close the battery cover.



10. Calendar check

Press [CALENDAR] key and check that January 1st, 1993 [FRI] (Friday) is displayed.

11. Auto power off check

Leave the Organizer with the display ON, and check that the display will not turn off within 6 minutes and will turn off at latest after 8 minutes.

12. Advancement check

Check that the advancement is in the range of +0.7 to –0.88 sec/day at 20 to 30 °C.

13. Impulse/twist check

Drop the unit from a height of 10cm with the calender displayed, and check that there is no change in the display.

Twist the unit and check that there is no abnormality in the operation. For checking the operation, use the diag function.

2 Diagnostic function

- Necessary tools for diagnostic operation

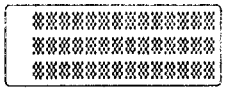
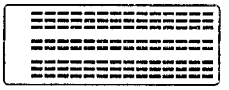
① The unit to be checked

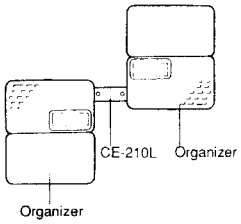
② Communication socket between CE-210L units (QCNCW1410 CC01)

③ Jig set (communication check mode) used as the receiver set in communication check

The set should be of the communication check mode (SIO CHK MODE).

* When a diagnostic function is performed, memory contents of units ① and ② are cleared. Save the data if necessary.

	Item	Operation	Display	Check content
	• Setting the jig (One unit of ZQ-1000 /1050/1200/1250)			
1.	Entering communication check mode (SIO CHK MODE)	While pressing [ON] and [9] keys, press [RESET] key.	1:CHK 2:AG1 4:WRITE 5:READ 6:SIO	
2.		Press [6] key. (The unit goes into the communication check mode (SIO CHK MODE).	SIO CHK	
3.	Completion of jig setting			
	• Entering the process check mode (Process check start display signal check)	While pressing [ON] and [9] keys, press [RESET] key.	1:CHK 2:AG1 4:WRITE 5:READ 6:SIO	
①		Press [1] key.		Check that all symbols light up, that dot display is zigzag display, and that there is no blur or leak.
②		Press [ENTER] key.		Check that dot display is reversed display of ① and that there is no blur or leak.
③		Press [ENTER] key.		Vertical line display same as ②
④		Press [ENTER] key.		Horizontal display same as ②
	(Completion of display signal check) To key signal check			
⑤	Key signal check	Press [ENTER] key.	KEY CHK ■■	
⑥		After pressing all the keys except for [RESET] and [ENTER] keys, press [ENTER] key.		Check that the upper display is [KEY CHK OK].
			KEY CHK OK USA ■■■■■■■■■■■■■■	Check that the middle display of the ZQ-1000 /1200 is [USA].
	(Completion of key signal check)		KEY CHK OK EURO ■■■■■■■■■■■■■■	Check that the middle display of the ZQ-1050 /1250 is [EURO].
⑦	RAM check	Several seconds after pressing [ENTER] key	KEY CHK OK RAM CHK 10K OK	Check that the middle display of the ZQ-1000 /1050 is [10K] and then [OK].
			KEY CHK OK RAM CHK 34K OK	Check that the middle display of the ZQ-1200 /1250 is [34K] then [OK].
	(Completion of RAM check)			

	Item	Operation	Display	Check content
⑧	Communication check	(Connect with the jig which has been set to the communication check mode by using the communication socket.  		
⑨	(Start of communication check)	Press [ENTER] key.	KEY CHK OK RAM CHK 10K OK SIO CHK OK	Check that lower display is SIO CHK OK. In the case of ZQ-1000 /1050
			KEY CHK OK RAM CHK 34K OK SIO CHK OK	In the case of ZQ-1200 /1250
	(Completion of communication check)			
⑩	(Completion of process check)	Disconnect the jig and the communication socket, and reset the both. Press [RESET] key Press [Y] key	DATA IMPAIRED! PRESS [Y] TO CLEAR MEMORY — TEL 1 — ♪ NAME?	

3 Data communication in servicing

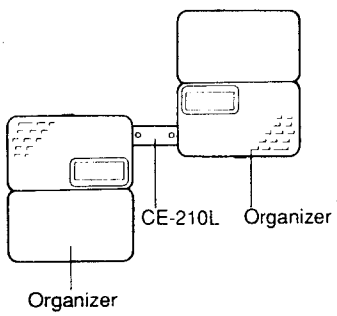
USING THE DATA TRANSFER FUNCTION

This Organizer can transmit data to and receive data from the following products using the option cable.

Products	Cable
ZQ-1000, ZQ-1200, ZQ-1050, ZQ-1250 (ZQ-1000 series)	CE-210L
EL-6160, EL-6170, EL-6190, EL-6260 (EL series)	CE-210L
ZQ-5000/2000 series, 8000/7000 series, etc. (Other Sharp Electronic Organizer)	CE-220T

CE-210L: 3-pin to 3-pin cable CE-220T: 3-pin to 4-pin cable

Before establishing communication between products, turn the products off and connect the cable.



Notes:

- To interrupt data transfer, press C·CE.
- If a connector is disconnected, or a similar problem occurs during data transfer, the message "I/O DEVICE ERROR !" will appear.
- After data transfer, the data on the transmitter is preserved.
- If the amount of memory available on the receiver at the time of transfer is insufficient, data transfer is not possible. The message "MEMORY FULL!" appears. Delete any unnecessary data, verify whether the available memory is sufficient, and repeat the data transfer procedure.

Transferring data between ZQ-1000 series Organizers

Telephone directory, schedule, memo and expense data can be transferred. Data can be transferred and verified by mode (all items in the SCHEDULE mode, MEMO mode, EXPENSE mode, or a telephone directory - TEL1, TEL2, TEL3) or by data item. In addition, data can be backed up using Organizers of the same type.

Transferring data by mode and by data item

Schedule data are transferred by mode. During mode transfer, data previously stored in the specified mode of the receiver are deleted. Proceed with caution.

Note: When mode transfer is carried out in the telephone directory mode, all listings in the directory will be transferred. (In this case, the directory name is transferred at the same time.)

1. Select the mode on the transmitter and receiver.

   [SCHEDULE] [C·CE] (Transmitter)

   [SCHEDULE] (Receiver)

2. Select the data transfer function on the receiver.

   [2nd] [OPTION]

   ```
   < UNIT TO UNIT >
   1: SEND      2: RECV
   3: VERIFY
   ```

3. Set the receiver in the receive mode.

   2

   ```
   < UNIT TO UNIT >

   RECEIVING MODE
   ```

4. Select the data transfer function on the transmitter.

   [2nd] [OPTION]

   ```
   < UNIT TO UNIT >
   1: SEND      2: RECV
   3: VERIFY
   ```

Note: When transferring by data item, display the desired data and press [2nd] [OPTION].

5. Perform data transfer.

   1

   ```
   < UNIT TO UNIT >

   -SENDING-
   ```

Notes:

- If mode of the transmitter and the mode of the receiver are not the same, data transfer is not established. The message "DATA ERROR !" is displayed.
  When telephone directory data are transferred, directories on the transmitter and receiver can be different. However, the contents received by the receiver will be stored in the open directory. For example, if data transfer is established between file TEL1 in the transmitter and file TEL3 in the receiver, then the contents of TEL1 will be sent to and stored in TEL3.
- Turn off the secret function on both the transmitter and the receiver before mode transfer.

Transferring backup data

All the contents (including the anniversary) of the Organizer are transferred. During backup data transfer, data stored on the receiver are deleted. Proceed with caution.

(Backup data transfer is only possible between identical products.)

1. Select the data transfer function on the receiver and set it in the receive mode for backup data transfer.

   [2nd] [OPTION]

   [2nd] 2

   ```
   < UNIT TO UNIT >
   BACKUP
   RECEIVING MODE
   ```

2. Select the data transfer function on the transmitter and perform backup data transfer.

   [2nd] [OPTION] [2nd] 1 [Y]

Verifying data

It is possible to verify data by mode or by data item. If any discrepancies are found, the message "VERIFY ERROR !" is displayed.

Verify data in the SCHEDULE mode.

1. Select the mode on the transmitter and the receiver.

   [SCHEDULE] [C·CE] (Transmitter)

   [SCHEDULE] (Receiver)

2. Set the receiver in the verify mode.

   [2nd] [OPTION] 3

   ```
   < UNIT TO UNIT >

   -VERIFYING-
   ```

3. Select the data transfer function on the transmitter.

   [2nd] [OPTION]

Note: To verify one data item, display the data item to be verified and press [2nd] [OPTION].

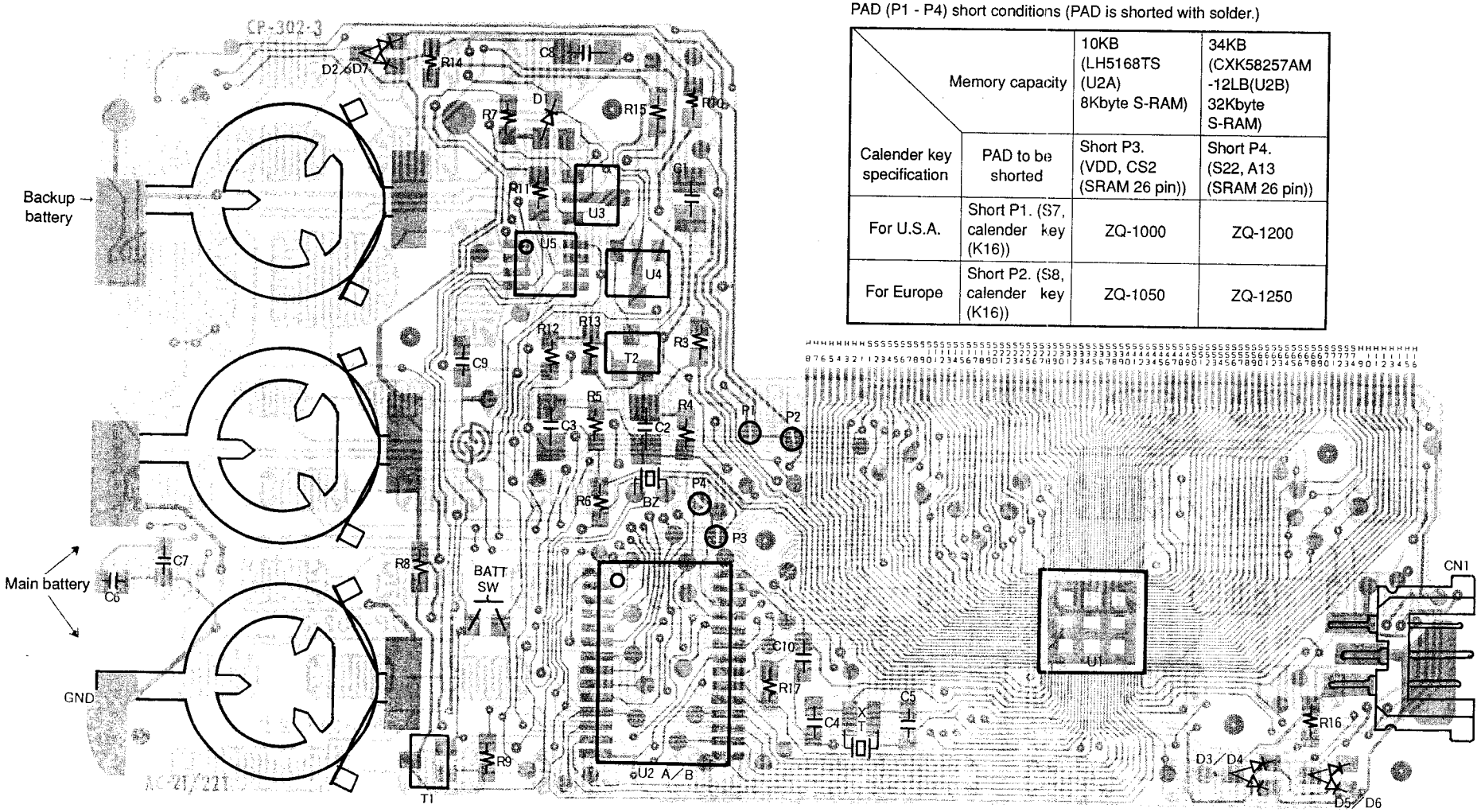
4. Perform verification.

   1

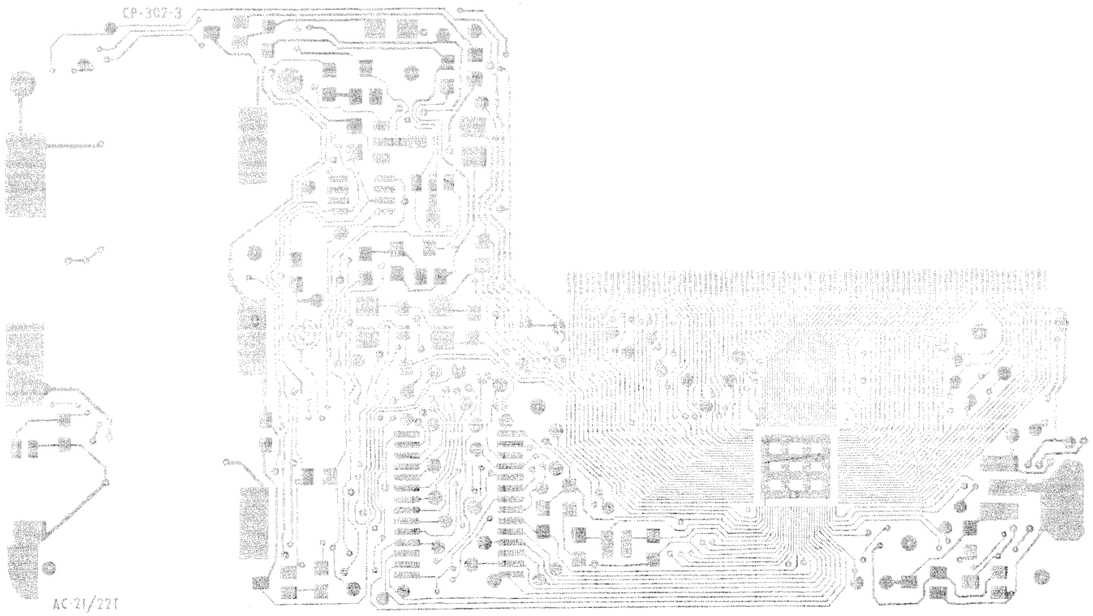
Parts arrangement

PAD (P1 - P4) short conditions (PAD is shorted with solder.)

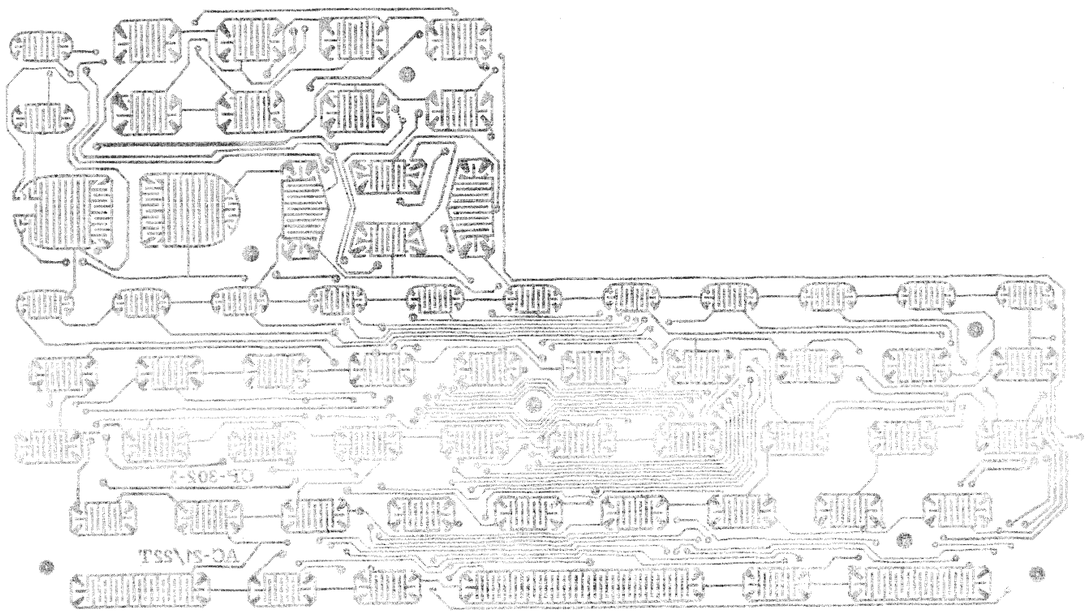
		Memory capacity	10KB (LH5168TS (U2A) 8Kbyte S-RAM)	34KB (CXK58257AM -12LB(U2B) 32Kbyte S-RAM)
Calender key specification	PAD to be shorted		Short P3. (VDD, CS2 (SRAM 26 pin))	Short P4. (S22, A13 (SRAM 26 pin))
For U.S.A.	Short P1. (S7, calender key (K16))		ZQ-1000	ZQ-1200
For Europe	Short P2. (S8, calender key (K16))		ZQ-1050	ZQ-1250



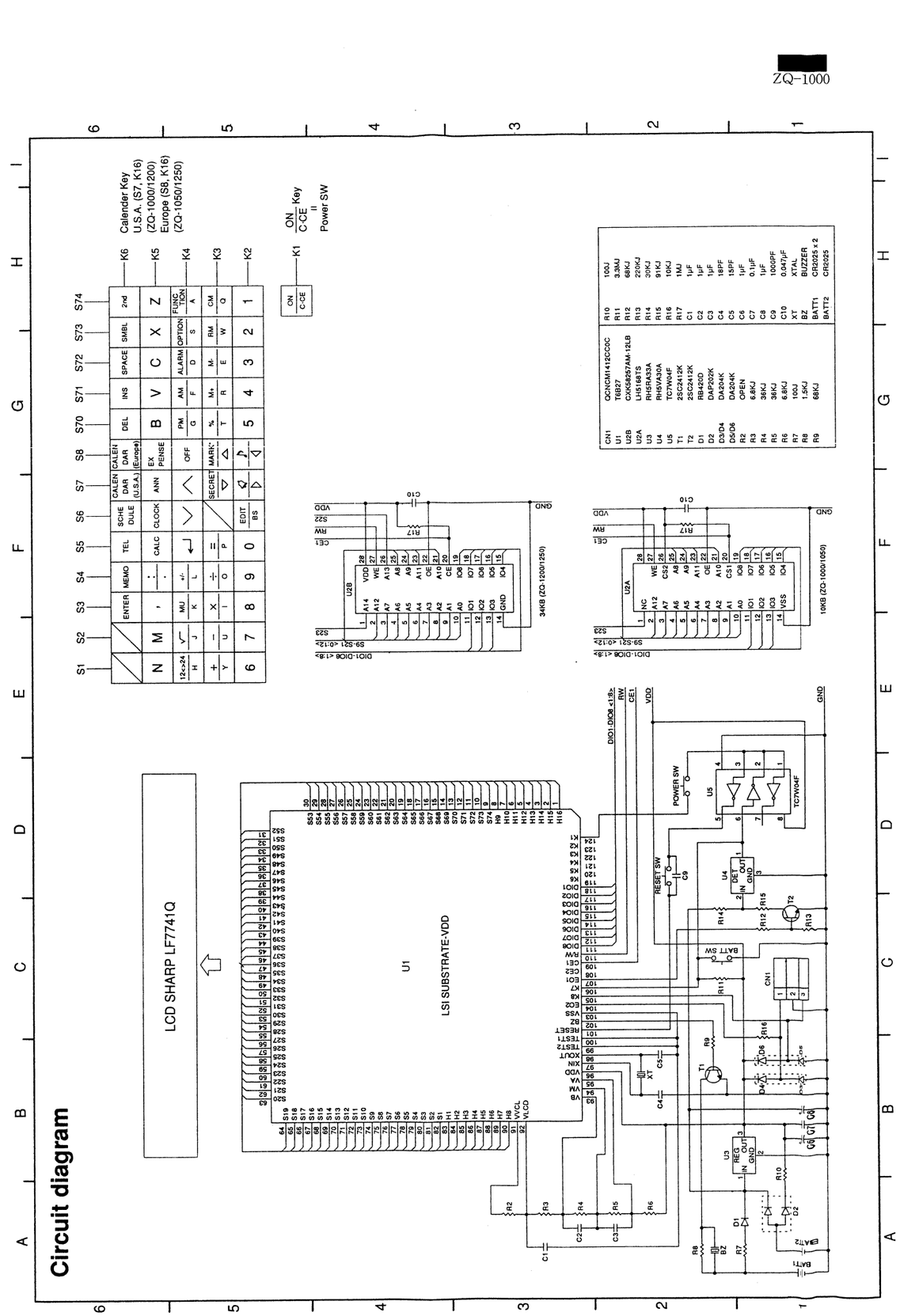
Wiring pattern (Parts surface)
(about double size)



Wiring pattern (Key surface)
(When viewed from the parts surface. About double size)



Circuit diagram

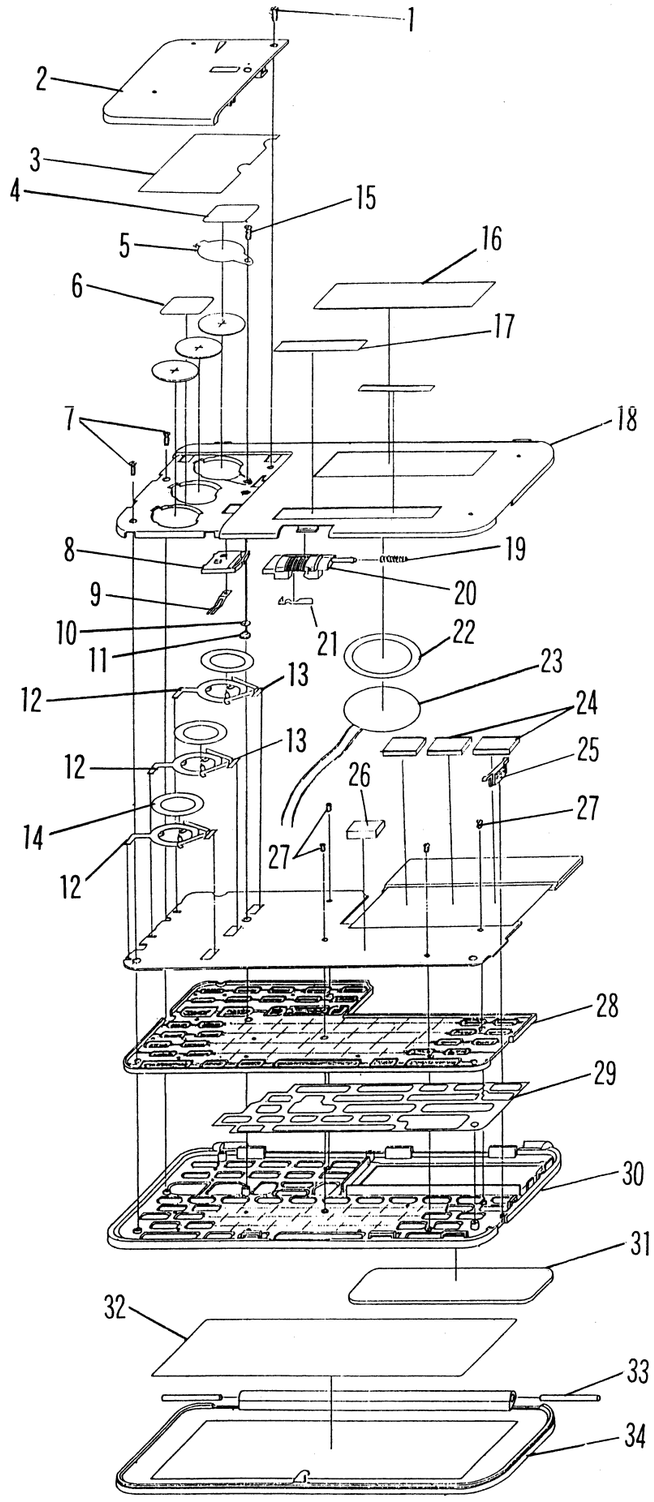


Parts list & guide

1 Exteriors

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ZQ 1000 1050	ZQ 1200 1250
1	0GV6317-0412A4	AA	N	C	Screw(for battery door)	○	○
2	0GV21CP-0618A0	AB	N	D	Battery door	○	○
3	0GV22CP-05C8A1	AB	N	D	Battery door label	○	○
4	0GV8106-BA92A3	AB		D	Battery caution(back up)	○	○
5	0GV51CP-02A0A4	AB	N	D	Back up battery door	○	○
6	0GV8106-BA92A2	AB		D	Battery caution(main)	○	○
7	0GV6217-0412D3	AA		C	Screw(for bottom cabinet)	○	○
8	0GV21CP-07A8A0	AB	N	B	On-off switch	○	○
9	0GV6102-2200A4	AA	N	C	Contact plate	○	○
10	0GV22BA-1227A0	AA		D	Reset key cover	○	○
11	0GV07BN-0200A7	AB	N	D	Reset rubber pad	○	○
12	0GV6101-7900A1	AA		C	Battery contact(⊖)	○	○
13	0GV6101-7800A1	AA		C	Battery contact(⊕)	○	○
14	0GV2206-0527A0	AA	N	D	Battery insulation ring sheet	○	○
15	0GV6217-04T2D3	AA	N	C	Screw(for back up)	○	○
16	0GV22CP-1578B1	AB	N	D	Model label [for other countries]	○	
	0GV22CR-1578B1	AB	N	D	Model label [for Other countries]		○
	0GV22CP-1578C1	AB	N	D	Model label [for Germany,U.Kingdom]	○	
	0GV22CR-1578C1	AB	N	D	Model label [for Germany,U.Kingdom]		○
17	0GV8106-CP08A0	AB	N	D	Model change date label	○	○
18	0GV21CP-1018A1	AE	N	D	Bottom cabinet	○	○
19	0GV51CP-2406A0	AA	N	C	Slide knob spring	○	○
20	0GV21CP-08A8A0	AB	N	C	Push knob	○	○
21	0GV51BA-13A0A0	AB	N	C	Pop-up spring	○	○
22	0GV9602-1927C0	AB		D	Buzzer tape	○	○
23	0GVS0003BZWiRE	AC		B	Buzzer [BZ]	○	○
24	0GV9601-1218B2	AA	N	C	LCD cushion	○	○
25	0GV21CP-01A8A0	AB	N	D	Connector cover	○	○
26	0GV9601-0510B3	AM		C	Crystal cushion	○	○
27	0GV6217-5212D3	AF	N	C	Screw(for PCB)	○	○
28	0GV07CP-1200A8	AM	N	C	Rubber keytop	○	○
29	0GV51CP-0100A0	AD	N	C	Al sheet	○	○
30	0GV21CP-1318A1	AF	N	D	Top cabinet	○	○
31	0GV22CP-0468A2	AB	N	D	Display panel [for other countries]	○	
	0GV22CR-0468A2	AB	N	D	Display panel [for Other countries]		○
	0GV22CP-0468A3	AB	N	D	Display panel [for Germany,U.Kingdom]	○	
	0GV22CR-0468A3	AB	N	D	Display panel [for Germany,U,Kingdom]		○
32	0GV22CP-03C8A2	AD	N	D	Hard cover label [For Germany]	○	○
	0GV22CP-03C8A1	AD	N	D	Hard cover label(English) [except Germany]	○	
	0GV22CR-03C8A1	AD	N	D	Hard cover label(English) [except Germany]		○
	0GV22CP-03C8A3	AD	N	D	Hard cover label(Accessory french) [for Canada]	○	
	0GV22CR-03C8A2	AD	N	D	Hard cover label(Accessory french) [for Canada]		○
33	0GV51CP-1620A0	AB	N	C	Lock pin	○	○
34	0GV21CP-1118A1	AF	N	D	Hard cover(10KB)	○	
	0GV21CR-1118A1	AF	N	D	Hard cover(34KB)		○

1 Exteriors



2 Packing material & Accessories

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ZQ 1000 1050	ZQ 1200 1250
1	0GV9104-CP06A0	AN	N	D	Instruction book [except Germany,U.Kingdom]	○	○
	0GV9104-CP06A1	AN	N	D	Instruction book [for Canada]	○	○
	0GV9104-CP09A0	AR	N	D	Instruction book [for Singapore]	○	○
	0GV9104-CP07A0	AN	N	D	Instruction book [for U.Kingdom]	○	○
	0GV9104-CP04A0	AN	N	D	Instruction book [for Germany]	○	○
2	0GV9101-CPK6A0	AG	N	D	Packing case [for Canada]	○	
	0GV9101-CRK6A0	AG	N	D	Packing case [for Canada]		○
	0GV9101-CPK8A0	AF	N	D	Packing case [for other countries]	○	
	0GV9101-CRK8A0	AF	N	D	Packing case [for Other countries]		○
	0GV9101-CPK9A0	AF	N	D	Packing case [for Singapore]	○	
	0GV9101-CRK9A0	AF	N	D	Packing case [for Singapore]		○
	0GV9101-CPK4A0	AF	N	D	Packing case [for Germany]	○	
	0GV9101-CRK4A0	AF	N	D	Packing case [for Germany]		○
	0GV9101-CPK7A0	AG	N	D	Packing case [for U.Kingdom]	○	
	0GV9101-CRK7A0	AG	N	D	Packing case [for U.Kingdom]		○

3 PCB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ZQ 1000 1050	ZQ 1200 1250
1	VHiLH5168TS-1	AR	N	B	IC (LH5168TS) [U2A]	○	
	VHi58257AM12S	AX	N	B	IC (CXK58257AM-12LB) [U2B]		○
2	VHiRH5VA30A-1	AD	N	B	IC (RH5VA30A) [U4]	○	○
3	VHiRH5RA33A-1	AD	N	B	IC (RH5RA33A) [U3]	○	○
4	VHiTC7W04F/-1	AD		B	IC (TC7W04F) [U5]	○	○
5	VHDRB420D//-1	AD		B	Diode (RB420D) [D1]	○	○
6	VHDDA204K//-1	AC		B	Diode (DA204K) [D3/D4,D5/D6]	○	○
7	VS2SC2412K/-1	AB		B	Transistor (2SC2412K) [T1,T2]	○	○
8	0GV1903-3272CC	AF		B	Crystyal (32.768KHz) [XT]	○	○
9	RC-CZ1091CCZZ	AB		C	Capacitor (1μF) [C1,C2,C3]	○	○
10	VCSAPJ1CE105M	AC		C	Capacitor (16WV 1.0μF) [C8]	○	○
11	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.10μF) [C7]	○	○
12	VCKYTV1EF473Z	AA		C	Capacitor (25WV 0.047μF) [C10]	○	○
13	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF) [C9]	○	○
14	VCCCTV1HH180J	AA		C	Capacitor (50WV 18PF) [C4]	○	○
15	VCEAJU1HW105M	AB		C	Capacitor (50WV 1.0μF) [C6]	○	○
16	VRS-TS2AD335J	AA		C	Resistor (1/10W 3.3MΩ ±5%) [R11]	○	○
17	VRS-TS2AD105J	AA		C	Resistor (1/10W 1.0MΩ ±5%) [R17]	○	○
18	VRS-TS2AD224J	AA		C	Resistor (1/10W 220KΩ ±5%) [R13]	○	○
19	VRS-TS2AD913J	AA		C	Resistor (1/10W 91KΩ ±5%) [R15]	○	○
20	VRS-TS2AD683J	AA		C	Resistor (1/10W 68KΩ ±5%) [R9,R12]	○	○
21	VRS-TS2AD363J	AA		C	Resistor (1/10W 36KΩ ±5%) [R4,R5]	○	
	VRS-TS2AD363J	AA		C	Resistor (1/10W 36KΩ ±5%) [R4,R5,R9,R12]		○
22	VRS-TS2AD303J	AA		C	Resistor (1/10W 30KΩ ±5%) [R14]	○	○
23	VRS-TS2AD682J	AA		C	Resistor (1/10W 6.8KΩ ±5%) [R3,R6]	○	○
24	VRS-TS2AD152J	AA		C	Resistor (1/10W 1.5KΩ ±5%) [R8]	○	○
25	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%) [R7,R10]	○	○
26	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%) [R16]	○	○
27	QCNCM1412CC0C	AD		B	Connector (3pin) [CN1]	○	○
28	VHDDAP202K/-1	AB		B	Diode (DAP202K) [D2]	○	○
29	0GVS0003BZWiRE	AC		B	Buzzer [BZ]	○	○
30	VCCCTV1HH150J	AA		C	Capacitor (50WV 15PF) [C5]	○	○

[redacted]
ZQ-1000

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SHARP CORPORATION
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